

# Overview of Western's Current Transmission Business Unit Activities

Meeting Transmission Challenges in the  
Rocky Mountain Region

June 21, 2011

# Overview

- General description of the TBU
- General overview of FERC 890
  - Conditional Firm
- Queue Processes
  - Western's Interconnection Process
  - Western's Transmission Service Process
- Interconnection Queue Metrics
- Transmission Challenges
  - NERC MOD Standards
- Disclaimer: Way too many acronyms

# General Description of the TBU

- OATT Management
  - Transmission Service Requests
  - Interconnection Requests
  - OASIS Management
- Industry Restructuring
- FERC and NERC Compliance
- FERC - Transmission Provider-TP
- NERC - Transmission Service Provider-TSP

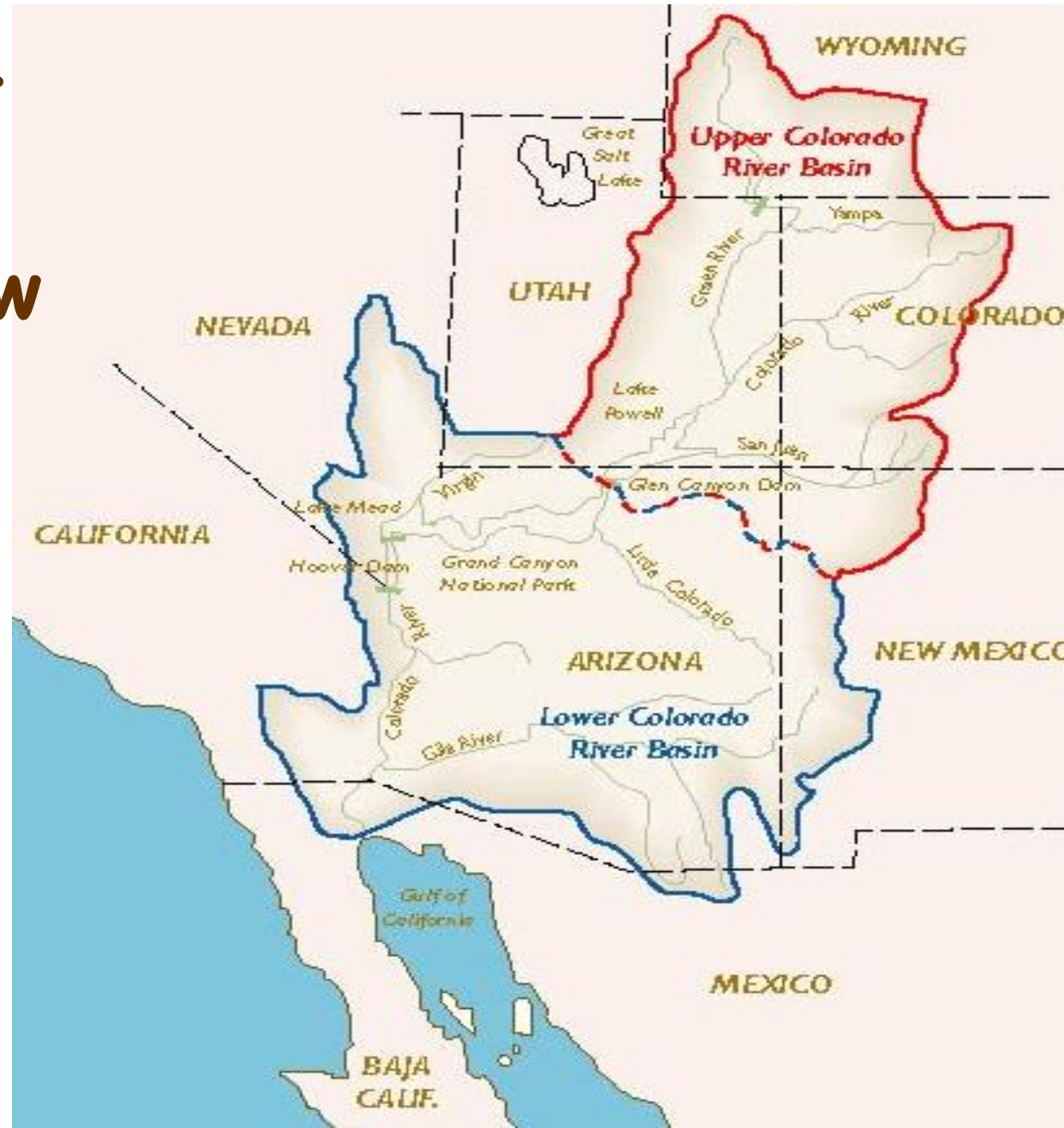
# General Description of the TBU

- Transmission Footprint
  - Rocky Mountain Region - WACM BA
    - Colorado River Storage Project
    - Loveland Area Projects
  - Desert Southwest Region - WALC BA
    - Central Arizona Project
    - Colorado River Storage Project
    - Pacific Northwest-Pacific Southwest Intertie Project
    - Parker Davis Project
    - Boulder Canyon Project (Non-transmission)

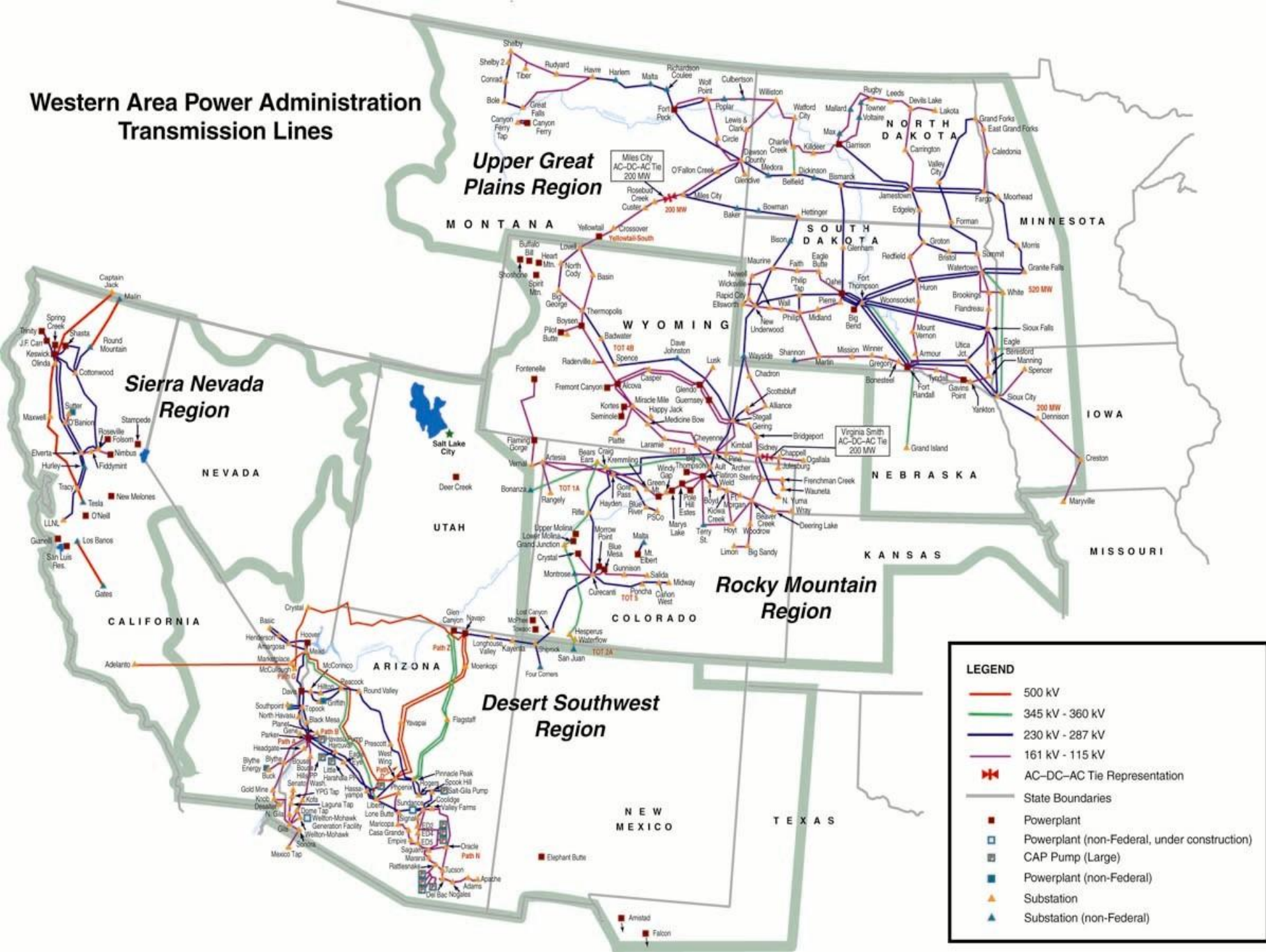




# TBU Footprint WACM and WALC BA View



# Western Area Power Administration Transmission Lines



# Transmission Business Unit

- Dino Benally - Phoenix
- [benally@wapa.gov](mailto:benally@wapa.gov)
- Debbie Farm - Loveland
- [dfarm@wapa.gov](mailto:dfarm@wapa.gov)
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- John Steward - Phoenix
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# General overview of FERC 890

- Order 890 issued Feb. 16, 2007
- Western maintains a safe harbor OATT with FERC
- Western revised OATT to address Order 890
  - **Effective December 1, 2009**
- FERC approved as an acceptable reciprocity
  - **December 2, 2010**
  - **Subject to a compliance filing**
    - Attachments C, P, and Q
- Western made its compliance filing March 2, 2011
- OATT can be found:
  - **<http://www.wapa.gov/transmission/oatt.htm>**





# 890 Revisions: General

- Transmission study clustering provisions
- Creditworthiness review procedures
- Simultaneous Submission Window
- Unreserved Use penalty rate method
- Environmental Study Agreements
- ATC Methodologies
- Transmission Planning Process
- Conditional Firm (CF)
  - More on the following slides

# 890 Revision: Conditional Firm

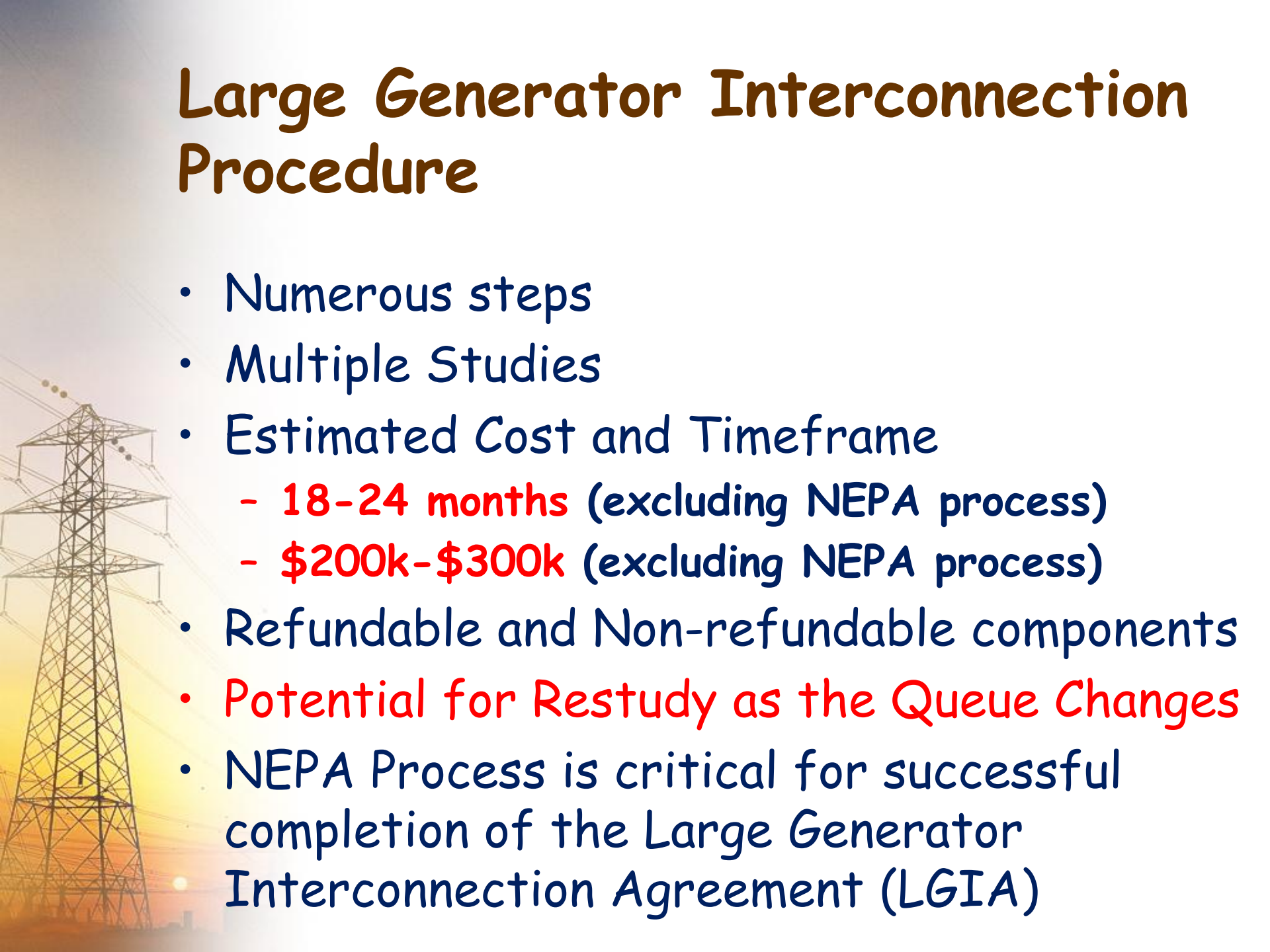
- Conditional firm (CF) service
- Customer may request CF service if Long Term Firm Point-to-Point (LTF PTP) not available
- Similar to LTF PTP, but service provided at priority level 6 when curtailments occur:
  - Above a defined number of hours annually; or
  - During defined system conditions
- Charged at LTF PTP rate
- Conditional Firm supports renewable generation

# Queue Processes

- Interconnection Queue
  - GRI: General Requirements for Interconnection
  - LGIP: Large Generator Interconnection Procedure
  - SGIP: Small Generator Interconnection Procedure
  - LGIA: Large Generator Interconnection Agreement
- Transmission Service Queue
  - TSR: Transmission Service Request
  - TSA: Transmission Service Agreement
- These are separate and distinct queues
- There is no requirement to request Transmission Service simultaneous with an Interconnection Request

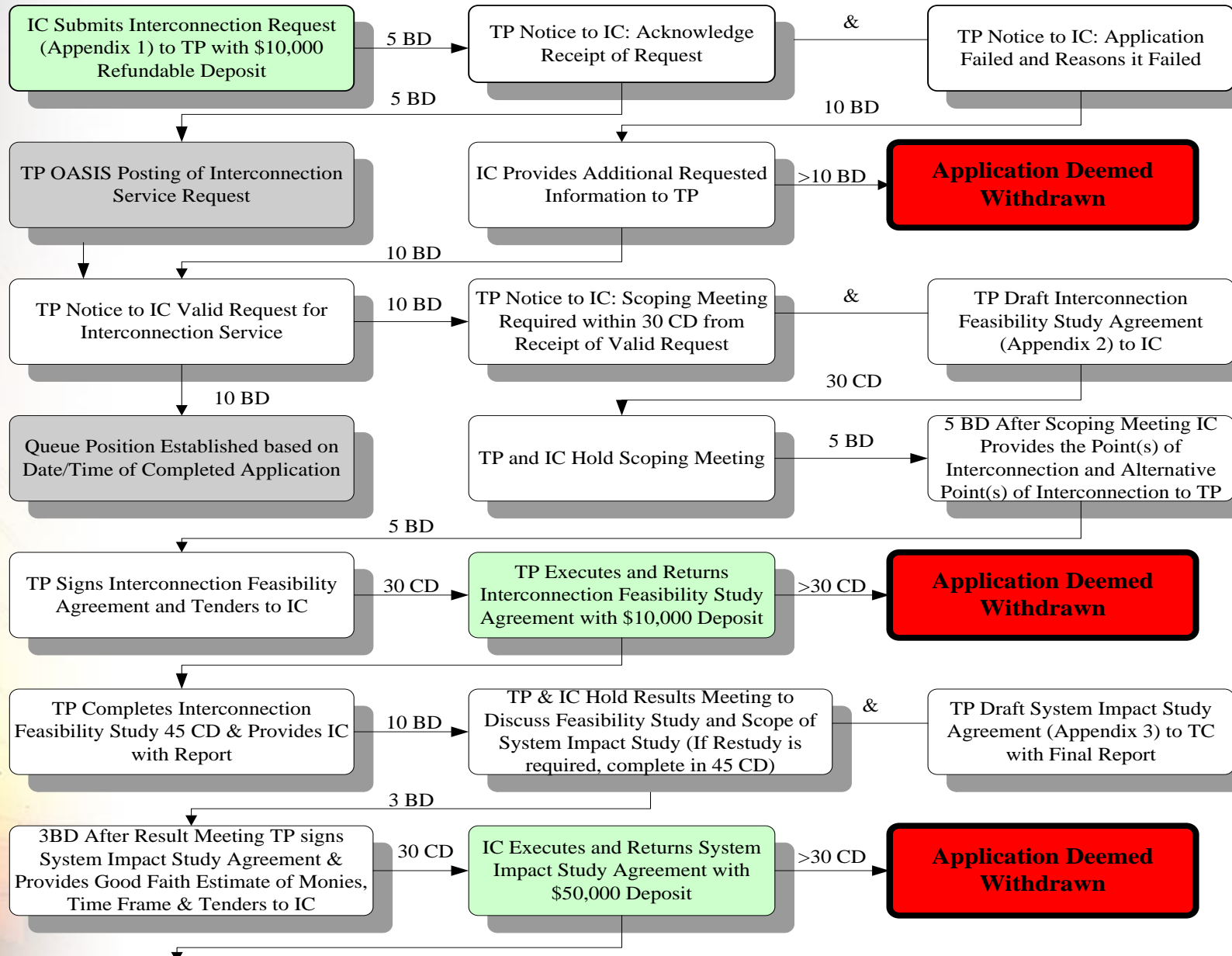


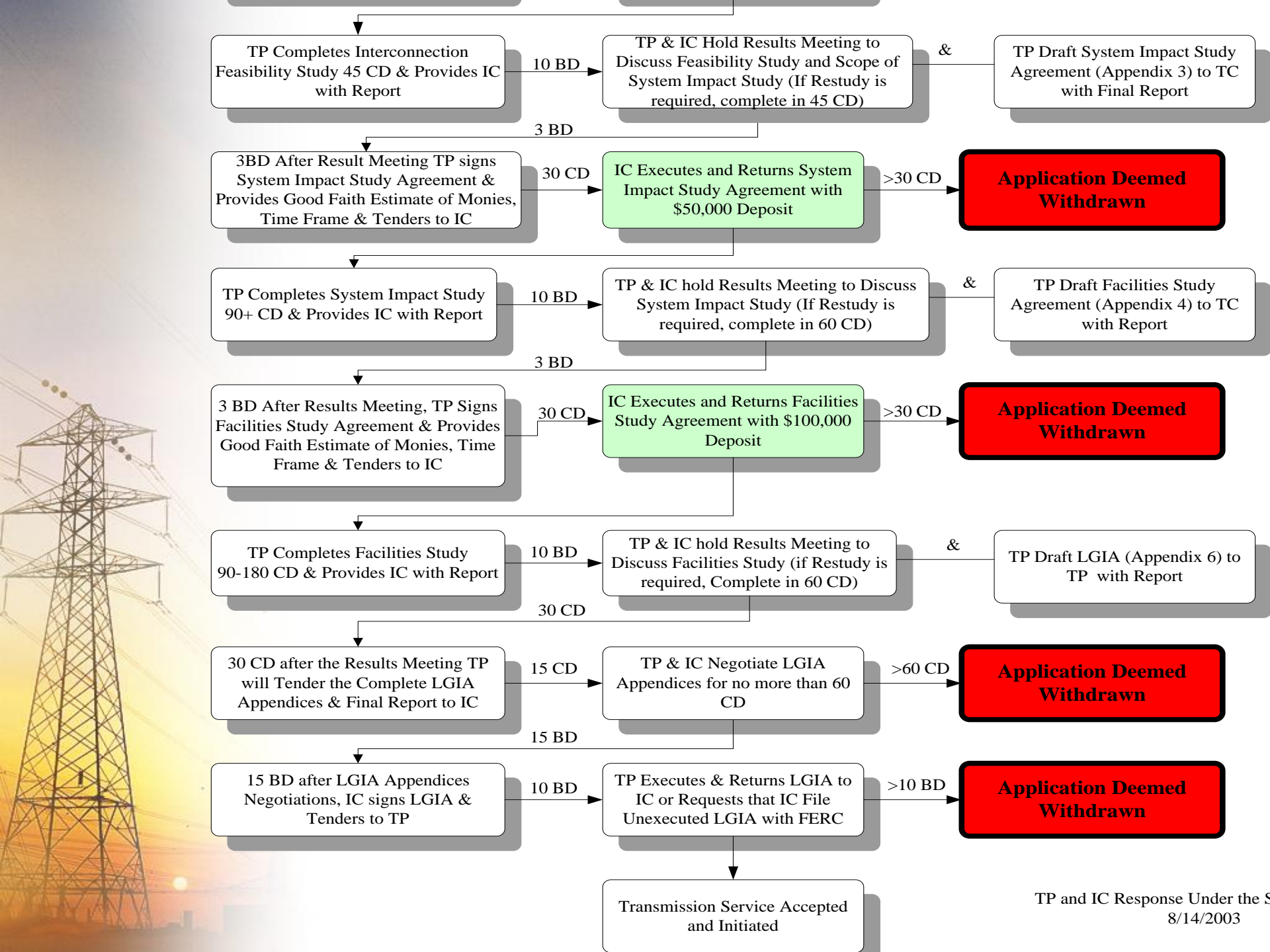
# Large Generator Interconnection Procedure

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- Numerous steps
  - Multiple Studies
  - Estimated Cost and Timeframe
    - 18-24 months (excluding NEPA process)
    - \$200k-\$300k (excluding NEPA process)
  - Refundable and Non-refundable components
  - Potential for Restudy as the Queue Changes
  - NEPA Process is critical for successful completion of the Large Generator Interconnection Agreement (LGIA)

# Transmission Provider (TP) and Interconnection Customer (IC) Responses Under the Standard Large Generator Interconnection Procedures (LGIP)

BD= Business Days      CD= Calendar Days









# LGIP-Beginning the Process

- Interconnection Customer must submit an Interconnection Request .
- When the Interconnection Request is complete and has been deemed valid, Western will place it in the interconnection queue in chronological order with any other pending requests.
- Western and the Interconnection Customer will schedule a Scoping Meeting to discuss possible Points of Interconnection.

# LGIP-Interconnection Studies

- The Scoping Meeting is followed by a series of Interconnection Studies to be performed by, or at the direction of, Western to evaluate the proposed interconnection.
- Interconnection Feasibility Study
  - intended to preliminarily evaluate the feasibility of the proposed interconnection
    - power flow
    - short- circuit analyses.

# LGIP-Interconnection Studies

- Interconnection System Impact Study
  - comprehensively evaluates the impact of the proposed interconnection on the reliability of Western's transmission system and any Affected Systems
    - Stability
    - power flow
    - short-circuit analyses.



# LGIP-Interconnection Studies

- Interconnection Facilities Study
  - determines a list of any facilities and facility modifications necessary to complete the interconnection
    - the cost of those facilities
    - the time required to interconnect the Generating Facility with Western's transmission system.

# Large Generation Interconnection Agreement

- After the Interconnection Facilities Study report has been issued, and provided that the NEPA review finds that the interconnection may proceed, Western will also give the Interconnection Customer a draft LGIA that has been completed to the extent practicable.

# Large Generation Interconnection Agreement

- Western and the Interconnection Customer will then negotiate a schedule for constructing and completing any necessary Interconnection Facilities and Network Upgrades, with that schedule to be incorporated into the LGIA.

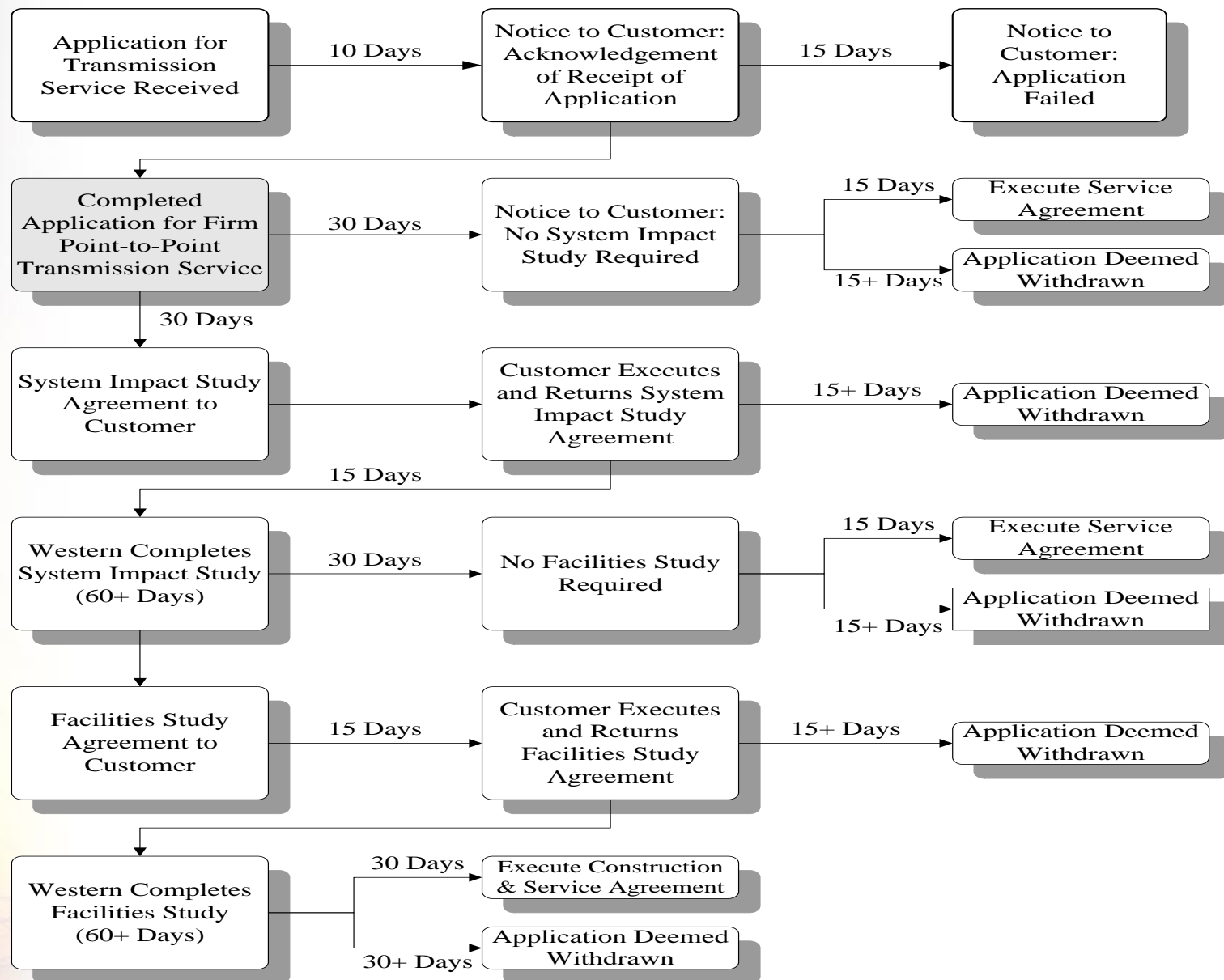
# Transmission Service Request

- Numerous steps
- Multiple Studies (Conditional Firm)
- Estimated Cost and Timeframe
  - 18-24 months (excluding NEPA process)
  - \$200k-\$300k (excluding NEPA process)
- Refundable and Non-refundable components
- Potential for Restudy as the Queue Changes
- One months deposit for Transmission Service (not to exceed \$100k)





# Western and Customer Responses During the Application and Request Process for Transmission Service Per the OAT Tariff

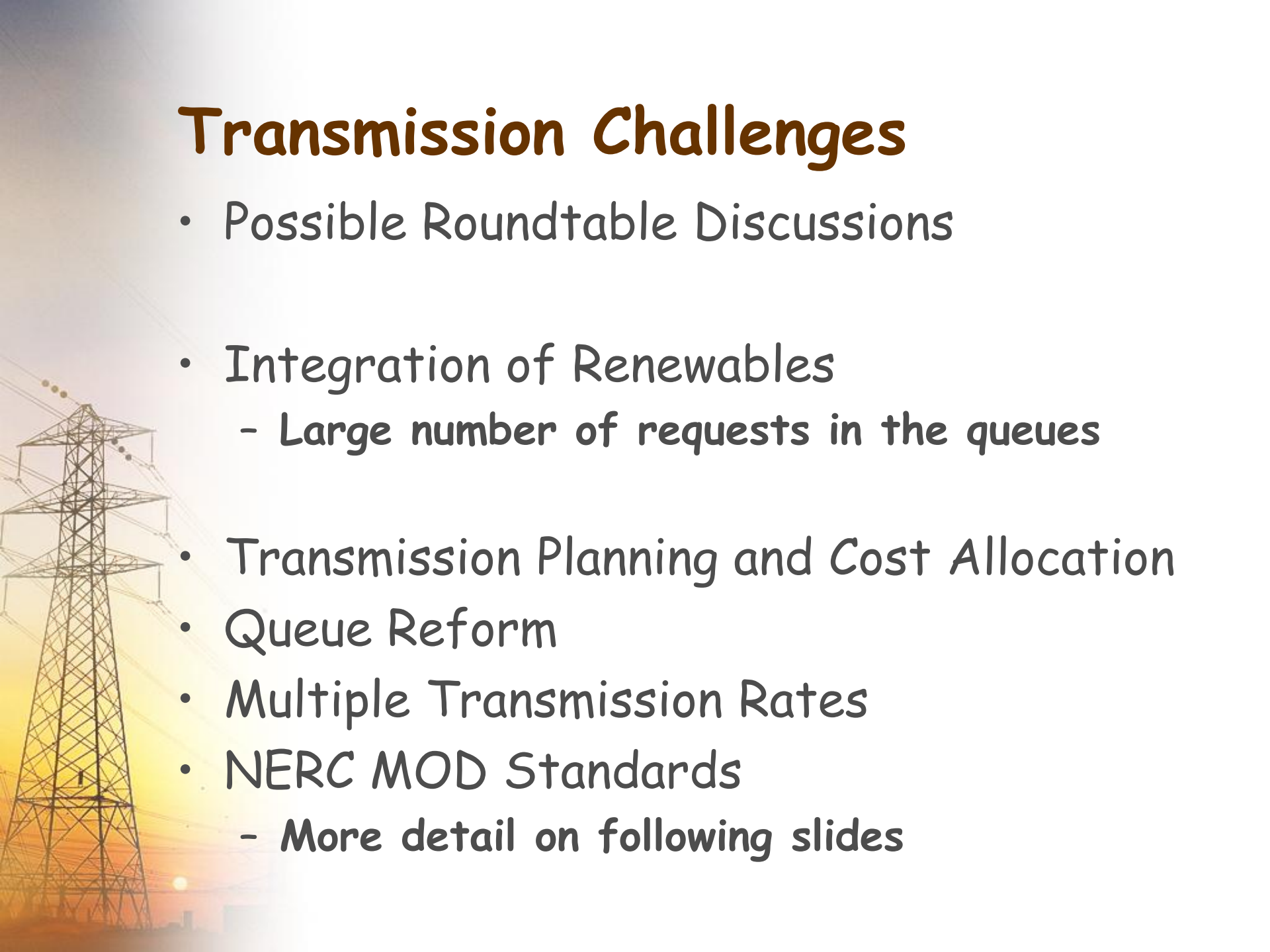


# Interconnection Queue Metrics

- Loveland
  - 13 Active
    - 1 Biomass
    - 12 Wind
  - 1656 MW
- Phoenix
  - 16 Interconnection Requests
    - 1 Natural Gas
    - 6 Wind
    - 9 Solar
  - 5100.1 MW

# Transmission Challenges

- Possible Roundtable Discussions
- Integration of Renewables
  - Large number of requests in the queues
- Transmission Planning and Cost Allocation
- Queue Reform
- Multiple Transmission Rates
- NERC MOD Standards
  - More detail on following slides



# Background - Suite of MOD Standards

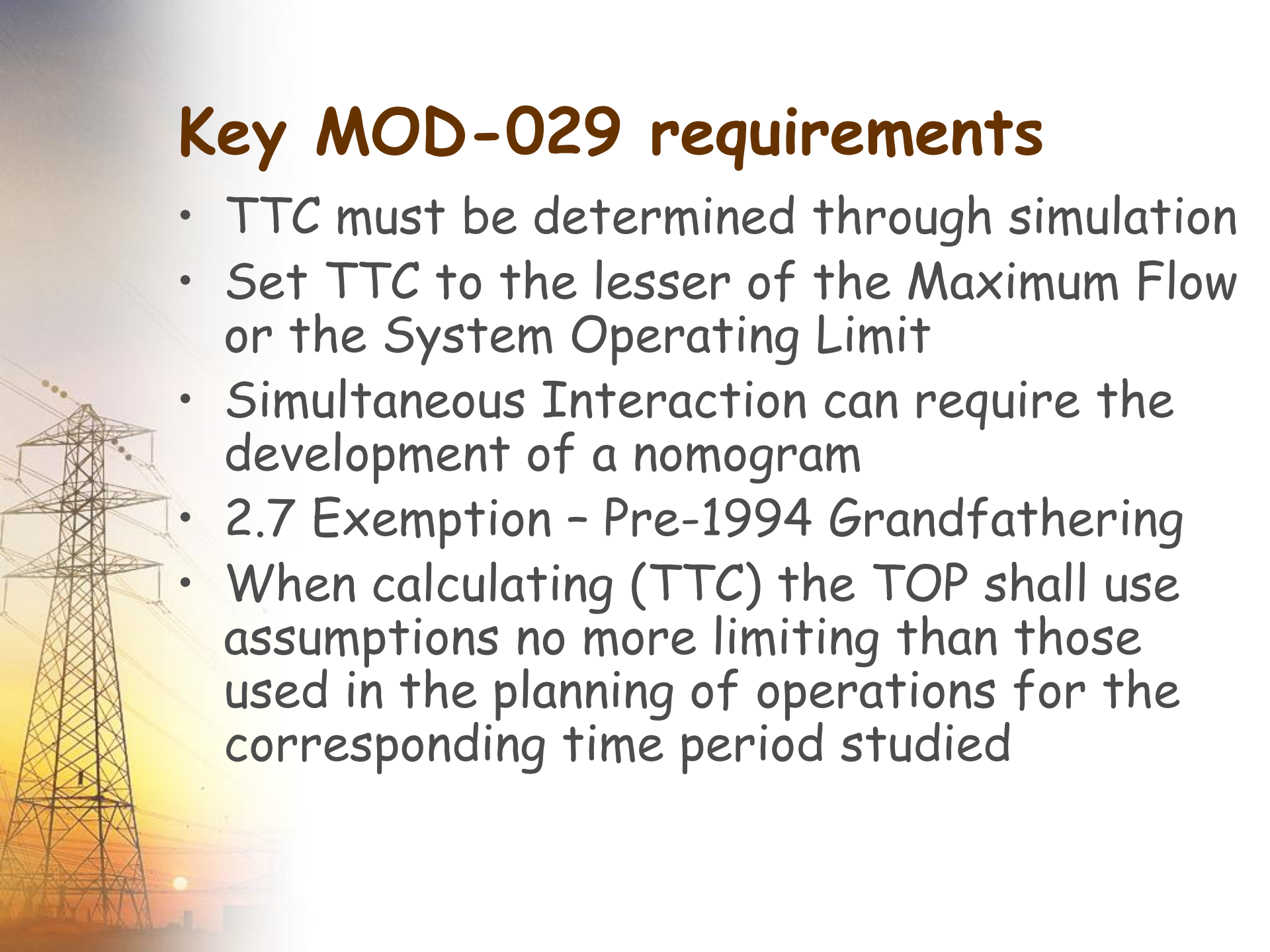
- April 1, 2011 Effective Date - M&E
- Audited in 2011
  - MOD-001 - ATC Implementation Document
  - MOD-004 - CBM Implementation Document
  - MOD-008 - TRM Implementation Document
- Spot-Checked in 2011
  - MOD-028 - Area Interchange Methodology
  - MOD-029 - Rated System Path Methodology
  - MOD-030 - Flowgate Methodology





# Key MOD-029 requirements

- TTC must be determined through simulation
- Set TTC to the lesser of the Maximum Flow or the System Operating Limit
- Simultaneous Interaction can require the development of a nomogram
- 2.7 Exemption - Pre-1994 Grandfathering
- When calculating (TTC) the TOP shall use assumptions no more limiting than those used in the planning of operations for the corresponding time period studied



# MOD-029 Impacts

- Potentially result in significant reduction in Total Transfer Capability (TTC) and resultant Available Transfer Capability (ATC)
  - Possible inability to serve network load
  - Possible inability to meet contractual OATT commitments
  - Reduced/Eliminated NF Transmission Sales
  - Impact on Transmission Rates
  - Potential Impact to Renewables



# Current MOD-029 Activity

- Waiver issued by NERC for paths that cannot achieve a reliability limit.
  - This mitigated all issues for RMR Transmission
- Joint Initiatives drafting a white paper to supplement a future Urgent Action SAR



